

Office of Environmental Health Hazard Assessment



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Agency Secretary

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Arnold Schwarzenegger
Governor

MEMORANDUM

TO: Gary Patterson, Ph.D., Chief
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FROM: Anna M. Fan, Ph.D., Chief
Pesticide and Environmental Toxicology Section
1515 Clay Street, 16th Floor
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DATE: December 2, 2004

SUBJECT: COMMENTS ON THE DRAFT DIETARY RISK CHARACTERIZATION
DOCUMENT FOR THE ACTIVE INGREDIENT CHLOROTHALONIL
PREPARED BY THE DEPARTMENT OF PESTICIDE REGULATION

Thank you for the opportunity to review the draft risk characterization document (RCD) for chlorothalonil prepared by the Department of Pesticide Regulation (DPR). The Office of Environmental Health Hazard Assessment (OEHHA) reviews risk assessments prepared by DPR under the general authority of the Health and Safety Code, Section 59004, and also under the Food and Agricultural Code (FAC), Section 13129, in which OEHHA has the authority to provide advice, consultation, and recommendations to DPR concerning the risks to human health associated with exposure to pesticide active ingredients.

In addition, pursuant to Food and Agricultural Code sections 14022 and 14023, OEHHA provides review, consultation and comments to DPR on the evaluation of the health effects of candidate toxic air contaminants (TAC) included in the RCD/TAC documents. As part of its statutory responsibility, OEHHA also prepares findings on the health effects of the candidate toxic air contaminants. This documentation is to be included as part of the DPR report.

California Environmental Protection Agency

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Chlorothalonil is a broad-spectrum fungicide used on fruits, vegetables, ornamentals, turf grass, paints and wood. The mechanism of action in yeast is inhibition of glycolytic and respiratory enzymes. Chlorothalonil is listed by the State of California under Proposition 65 as a chemical known to cause cancer. Approximately 630,000 pounds of chlorothalonil was applied in California in 2002.

DPR initiated this risk assessment under the mandate of California Assembly Bill 2161, known as the Food Safety Act as adverse effects were identified in acute toxicity, chronic toxicity, oncogenicity, and chromosomal effects studies with chlorothalonil. The RCD also addressed the potential risk associated with dietary exposure to SDS-3701 (a metabolite) and hexachlorobenzene (HCB, a contaminant). This version of the RCD evaluates only dietary exposures to the general public. Upon completion of the exposure assessment document, DPR plans to prepare an addendum that addresses occupational and residential exposures. OEHHA assumes that chlorothalonil will be considered in the addendum as a potential Toxic Air Contaminant (TAC). If this is indeed the case, OEHHA's subsequent review of the addendum will encompass a reevaluation of the toxicity database, taking into consideration inhalation studies that were not considered for this risk assessment since the route of human exposure under the current assessment was oral (dietary).

Our sole substantive concern with the dietary RCD is that subchronic/seasonal exposures to chlorothalonil were not evaluated in the document. The rationale provided was that "Seasonal exposure was not estimated since almost all commodities could be consumed throughout the year." We assume this to mean that because exposure to chlorothalonil does not, on average, vary appreciably over the course of a year; it is not necessary to evaluate seasonal exposures. OEHHA disagrees since seasonal exposures occur differently (exposure to food with consistently high residue levels are more likely over a short period of time than over a longer period) and are estimated differently than acute and chronic exposures (e.g., different assumptions regarding chemical concentrations in food – use of maximum residue concentrations versus mean concentrations, for example), it is important that subchronic exposure is characterized and evaluated. This is particularly relevant for chlorothalonil since the critical subchronic and chronic NOAELs are quite similar, 1.5 mg/kg-day and 1.8 mg/kg-day, respectively. The subchronic NOAEL of 1.5 mg/kg-day was based on increased kidney weights and the appearance of inclusion bodies in the kidneys of rats at the next higher dose of 3.0 mg/kg-day following a 13-week dietary exposure, and significantly increased labeling indices in rat stomach and kidney at the next higher dose of 15 mg/kg-day following a 28-day dietary exposure. The chronic NOAEL was 1.8 mg/kg-day based on kidney and fore stomach lesions in rats at the next higher dose of 3.8 mg/kg-day following a 111-week dietary exposure. Exposure sufficient to have a potential human health impact could occur in a subchronic time frame, but would be averaged out over the course of a year (or lifetime) and would therefore appear



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acceptable if evaluated on a chronic basis. Accordingly, OEHHA recommends adding this evaluation to the RCD.

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Other than our concern with seasonal exposures noted above, OEHHA finds the dietary RCD to be appropriate, comprehensive and well written. We agree with the critical studies identified in the RCD, their respective NOAELs and the justification provided for the selection of the endpoints. We also note that under the conditions of this RCD and the assumptions made in the document that acute and chronic dietary exposures to chlorothalonil do not appear to pose unreasonable risks to the general public.

Again, thank you for the opportunity to review this document and we hope that you find our comments useful. We look forward to our review of the addendums to this document that evaluate occupational exposure and aggregate exposures that include residues in ambient air as a source of exposure to propargite. Should you have any questions regarding OEHHA's review of this RCD, please contact Dr. David Rice at (916) 324-1277 (primary reviewer), Mr. Robert Schlag at (916) 323-2624, or me at (510) 622-3165.

cc: Val F. Siebal
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